

INTERNATIONAL SEARCH REPORT

Inter. Application No
PCT/US2004/020356

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12Q1/68 C07H21/00 A61K48/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, Sequence Search, WPI Data, PAJ, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE EMBL 'Online! 11 November 1999 (1999-11-11), "Homo sapiens BAC clone RP11-538J11 from 2, complete sequence." XP002313106 retrieved from EBI accession no. EM_HUM:AC013413 Database accession no. AC013413 the whole document</p> <p>----- -/--</p>	11-14

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

18 January 2005

Date of mailing of the international search report

02.05.2005

Name and mailing address of the ISA
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DATABASE EMBL 'Online! 16 July 2002 (2002-07-16), "Homo sapiens cDNA FLJ40417 fis, clone TESTI2038388, highly similar to Homo sapiens gamma cysteine string protein mRNA." XP002313107 retrieved from EBI accession no. EM_HUM:AK097736 Database accession no. AK097736 abstract</p> <p>-----</p>	1-24
A	<p>WO 02/24056 A (MARKOWITZ SANFORD ; UNIV CASE WESTERN RESERVE (US); GRADY WILLIAM (US)) 28 March 2002 (2002-03-28) the whole document</p> <p>-----</p>	1-24
A	<p>WO 03/014388 A (TAUBERT HEIKE ; DISTLER JUERGEN (DE); EPIGENOMICS AG (DE); MODEL FABIA) 20 February 2003 (2003-02-20) page 8, line 32 - page 20, line 31 page 23, line 1 - page 24, line 8; claims 1-40; table 1</p> <p>-----</p>	1-24

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Information on patent family members

International Application No
PCT/US2004/020356

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0224056	A	28-03-2002	AU 2432802 A WO 0224056 A2 US 2003068620 A1	02-04-2002 28-03-2002 10-04-2003
WO 03014388	A	20-02-2003	DE 10139283 A1 CA 2455161 A1 WO 03014388 A2 EP 1421220 A2 US 2005064410 A1	13-03-2003 20-02-2003 20-02-2003 26-05-2004 24-03-2005

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In **ational application No.**

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Box No. I **Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)**

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
 - a. type of material
 - ☒ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☐ in written format
 - ☒ in computer readable form
 - c. time of filing/furnishing
 - ☐ contained in the international application as filed
 - ☐ filed together with the international application in computer readable form
 - ☒ furnished subsequently to this Authority for the purpose of search
2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 4-10, 24, 25
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
2. ☒ Claims Nos.: 25
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-25 (all partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Although claims 4-10 encompass a surgical method carried out on the human or animal body, the search has been carried out as if such a step were not included.

Although claim 24 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box II.1

Claims Nos.: 4-10,24,25

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery (claims 4-10)

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy (claim 24)

Continuation of Box II.2

Claims Nos.: 25

Claim 25 is unclear (Art.6 PCT) to the extent that no meaningful search is possible across the entire scope of the claim. Said claim relates to a nucleic acid molecule that is not defined in terms of its technical features, but only with respect to a vaguely defined chemical treatment. Furthermore the term "derived from" is vague and open to interpretation. The only sequences derived from SEQ ID NO.1 that are clear from the application are those defined by SEQ ID Nos 40, 41, 118 and 119, these being possible results of a bisulfite treatment. However, as such subject-matter has been searched in respect of other claims (e.g. claims 11 and 12), no search is provided for claim 25.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

Invention 1: Claims 1-25 (all partially)

A method for detecting colorectal cell proliferative disorders comprising contacting genomic DNA with (a) reagent(s) that distinguish methylated and non-methylated CpG dinucleotides within a target sequence that comprises at least 18 contiguous nucleotides of the sequence defined by SEQ ID NO.1; a nucleic acid comprising a sequence of at least 18 contiguous nucleotides, including at least one CpG, TpA or CpA dinucleotide, of a DNA sequence selected from SEQ ID NO.40, 41, 118 or 119 or sequences complementary thereto; an oligomer comprising a sequence of 9 contiguous nucleotides complementary to or hybridizing to a DNA sequence selected from SEQ ID NO.40, 41, 118, 119 and sequences complementary thereto; a set of at least two of said oligomers; use of said set for detecting cytosine methylation; an array comprising said set; a kit for detecting colorectal proliferative disorders; uses of the aforementioned products.

Invention 2: Claims 1-25 (all partially)

As invention 1, wherein the genomic sequence is defined by SEQ ID NO.2, and the altered sequences are defined by SEQ ID NOS 42, 43, 120, 121.

Inventions 3-39: Claims: 1-25 (all partially)

As invention 1, for genomic sequences 3-39 and altered sequences 44-117 and 122-195.
